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## NAVAJO NAMES FOR PLANTS.

BY DR. W. MATTHEWS, U.S.A.

THE plant-lore of the Navajo Indians compared with that of white men who are not specially versed in botany, is remarkable for its extent and accuracy. There are few species of phænogamous plants, among the varied flora of their country, for which they have not distinct, well-chosen names, and of whose physical properties they have not made some observation. True all do not possess such knowledge, and one is sometimes in danger of being deceived by the uninformed who will coin a name for the occasion rather than confess ignorance. This knowledge is, however, pretty well diffused, and there are many grades of proficiency in it. The better informed, in widely distant parts of the Navajo country, agree closely as to the names and properties of the great majority of species. My best informant was an old woman, probably over seventy years old. My next best informant was a very intelligent man of about thirty-five years of age. An old priest or so-called medicine-man, over sixty, who knew the Shamanistic rites and the elaborate mythology of the tribe perfectly, knew less of plant-lore than many others. It would seem that it is not the oft-quoted wise old medicine-man of the Indian tribe who knows the most of nature. I have heard from many Navajos of a wise man dwelling in the far north-western part of the Navajo country who knew most about the vegetable kingdom of all the Navajos. I regret that I never had an opportunity of meeting this man. He seems to be their highest authority in botany.

Not only do the Navajos discriminate all the more important species, but they are not devoid of generalization among allied species. In some cases this generalization agrees with our own. For instance, there are three species of juniper growing in the Zuñi mountains; each has its own appropriate name, yet the generic name for juniper (*koth*) appears in all. The most common kind of sunflower bears the name of *indigili*; as with ourselves, this is taken as a type or foundation species of plants in the sub-tribe Heliantheæ, and we have *indigili nilchini*, strong-scented sunflower (*Verbesina enceloides*), and *indigili nilchinitso*, great strong-scented sunflower (*Helianthus nuttallii*).

Of a class of plants so rank and showy as the sunflower

family, it is easy to credit this; but it is more difficult to realize that in the obscurely flowered and unattractive Chenopodiaceæ and Amaranthaceæ their faculties of observation have guided them as safely. In the section of the Navajo country where I did most of my collecting there are two species of *Chenopodium* so much alike that white people in general do not distinguish them from one another but call them all "lamb's quarter." There is still another so little like its congeners in its macroscopic characters that none, I imagine, but the scientific could trace the relationship; this is the *Chenopodium*, or *Teloxys cornutum*; when burned it emits a fine aromatic odor, and in the late autumn it changes to a rich rose-lake color which lends a beautiful tint to the slopes of the Zuñi mountains. Again the relationship between the goosefoot and amaranth families is not known to the unscientific among ourselves. That the Navajos have traced some character in common, in these instances, is evident from the following names:

*Chenopodium fremontii*, *tlotáhi*.

*Chenopodium album*, *tlotáhi-tso*, or "great *tlotáhi*."

*Teloxys cornutum*, *tsinya tlotáhi*, or "*tlotáhi* under the trees," from its sub-arboreal habitat.

*Amaranthus retroflexus*, *tlotáhi-hochi*, or "prickly *tlotáhi*."

They do not however apply the name *tlotáhi* to all the Chenopodiaceæ, but they evidently connect the not very similar genera of *Atriplex* and *Sarcobatus*, the former being called *togoji*, referring to its spines, and the latter *togojjin*, or "black *togoji*."

They are not always thus happy with their classification, for *Silene lacinata* and *Castilleja affinis*, representing the widely separated families Caryophyllaceæ and Scrophulariaceæ are both called *táhitihita*, "humming-birds' corn," because humming-birds are often seen hovering over them. The Indians do not suppose them to be the same plant, but will tell you they are different kinds though named alike. The term *chil-epe*, "milk-plant," is sometimes applied to representatives of both Euphorbiaceæ and Asclepiadaceæ.

It would occupy too much space to recount all the facts concerning the properties of plants which I obtained from them, but I will narrate two instances:

*Comandra pallida* is a small low plant of obscure appearance; it is rare in the Navajo country, and grows on the mountains

among grasses and underbrush which almost hide it from sight. The unpracticed eye might pass by specimens of this plant a hundred times without observing them. I once took some of this Comandra to the man whom I have described as my second-best informant, yet doubting whether he knew anything of such a rare and, to me, useless plant. Without taking it into his hand or honoring it with more than a glance, he named it. I expressed some doubts. He replied, "I know it well. It has a blue root." Feeling now positive he was mistaken, I exhibited the root, which was a distinct white. Without answering he took the specimen out of my hand, scraped the root with his thumb nail, handed it back to me and told me to observe it for a moment. To my surprise the denuded root changed from white to a delicate cerulean tint.

On another occasion I met the same Indian carrying, in the fold of his blanket, some specimens of *Pectis angustifolia*, a plant which on the dry mesas of New Mexico does not attain a height of more than two or three inches, but it has a delightful odor, like that of lemon verbena, and its infusion is used by the Navajos as a carminative. Their attention has therefore been drawn to it. The name given for the plant was so peculiar, signifying "a breeze blowing through a rock," *tseganilchee*, that I made no delay in getting an explanation from him. He led me to the top of a desert mesa where the plant grew fresh. Here he picked up a piece of sandstone about a foot square and three inches thick, and held it up to my nose, saying, "Do you smell anything on that stone?" The dry hard stone was of course inodorous. He then rubbed a little of the fragrant *Pectis* on one of the broad surfaces of the stone and immediately applied the opposite surface to my nostrils. The agreeable odor was at once distinctly perceptible through the rock. Some minutes later it could be detected in all parts of the fragment; but at first it was perceived at a point directly opposite to the point of application. Later he performed the experiment on a large stone nearly two feet thick; the results were the same as with the smaller stone, but more time was required for the odor to penetrate the sandstone. The odor, he said, went through the rock as if it were blown by a breeze, hence the name. It is possible similar results might be obtained with other odoriferous substances.

Many plants are named from supposed medicinal virtues,

others from the animals which they seem to attract or furnish food for, others from fancied resemblances. The following list of some of the more important plants will show their different modes of devising names:

#### Order RANUNCULACEÆ.

*Delphinium scaposum* Greene, *tha'-di'-thee-do-tlij'*, "blue sacred powder." The powdered petals are used by the Shamans as a sacrifice to the gods of the south. Blue is the color sacred to the south in Navajo rites.

#### Order BERBERIDACEÆ.

*Berberis fremontii* Torrey and Gray, *kin-li-tso'-ee-tso*, "large yellow twigs." Used in dyeing buckskin yellow. "Great *kin-litsoe*," see *Berberis repens*.

*Berberis repens* Lindley, *kin-li-tso-ee*, "yellow twigs." The wood is yellow.

#### Order CRUCIFERÆ.

*Draba montana* Watson, *a-lij-be-i-tsol*. The name refers to its supposed diuretic properties.

*Arabis holbölli* Hornemann, *a-zay'-la-dil-tay'-hay*, "scattered," or "lone medicine." The plants grow singly and at a distance from one another, not in beds or clusters.

*Thelypodium wrightii* Gray, *nan-chath'-a-zay'*, "medicine for swellings."

*Stanleya pinnatifida* Nuttall, *tseh'-chosh-a-zay*, "medicine for the rock-worm," i. e., a glandular swelling.

*Physaria newberryi* Gray, *cheesh-a-zay*, "sneeze medicine." Used as a snuff in catarrh.

#### Order CARYOPHYLLACEÆ.

*Cerastium arvense* Linnæus, *tho-ka'-so-kath*, "it stands in water," i. e., it grows in moist places.

*Arenaria aculeata*, *a-zay-tlo-ee*, "medicine hay."

#### Order MALNACEÆ.

*Malvastrum coccineum* Gray, *a-zay-in-klin'-i*, "gummy or glutinous medicine." The infusion is a supposed remedy for diseases produced by witchcraft.

*Sphæralcea fendleri* Gray, *a-zay-in-klini-tso*. *Tso* signifies "large," see *Malvastrum coccineum*. These two plants are much alike in appearance.

## Order LINACEÆ.

*Linum rigidum* Pursh, *la-tha'-di-chol*, "round top," refers to shape of capsules.

## Order RHAMNACEÆ.

*Ceanothus fendleri* Gray, *peen'-bi'-tha*, "deer's food," or "deer's corn." It is said that the deer browse on it.

## Order VITACEÆ.

*Ampelopsis quinquefolia* Michaux, *chil-na'-tlo-i*, "plant that weaves," *i. e.*, climbs. The name is, however, by some applied to other vines. *Tla-ash-tla*, "five-leaf," is another name.

## Order ANACARDIACEÆ.

*Rhus aromatica* Aiton, var. *trilobata* Gray, *chil-chi'-ni*, or *chil-chin'*, "odorous plant." Some say the name should be pronounced *chee-li-jin'*, which would mean "dark red," also an appropriate name. Sometimes it is called *kin*, "the twig," because its twigs are those most used in making baskets. The acid fruit is eaten.

## Order LEGUMINOSÆ.

*Sophora sericea* Nuttall, *de-pay-hi-chi'-di*, "sheep scratch." It is said that sheep paw the ground to get at the roots. This name is also applied to some species of *Astragalus*.

*Lupinus brevicaulis* Watson, *a-zay-ba-ad'*, "female medicine." The name and probably the use were suggested by the peculiar appearance of the pod. It is supposed, when eaten, to be a remedy for barrenness, and to specially favor the production of female offspring.

*Trifolium involucratum* Willdenow, *cha'-in-tsi-li*, "transparent ear." Named from the appearance of the leaf.

*Hosackia nana* Watson, *neeh'-bist-yah*, "lies on the ground," so called because procumbent. It is also a *cheeshazay*, or catarrh remedy. See *Physaria newberryi*.

*Psoralea tenuifolia* Pursh, *leen-tha'-tsoz*, "slender horse corn."

*Petalostemon candidus* Nuttall, var. *occidentalis*, *has-thu'-i-bit-see-gale'*, "old man's queue," which the dense terminal white spike is supposed to resemble.

*Glycyrrhiza lepidota* Nuttall, *el-than'-ee-tsee-hee-tsoz*. *Tsoz* means "slender," see *Xanthium*. The pods are armed with hooked adherent prickles.

*Astragalus matthewsii* Watson, *a-zay-ba-adi-tso*. *Tso* signifies "great," see *Lupinus brevicaulis*, ante.

*Astragalus triflorus* Gray, *tha-hol-cho'-shee*, "popping leaf." Children burst the inflated pods on their foreheads.

*Astragalus kentrophyta* Gray, *ma-ee-nah'-ol-chil*, "coyote bean plant," or "wolf bean plant." A reputed remedy for rabies. The name is applied also to other species of *Astragalus* to which similar properties are attributed.

*Lathyrus polymorphus* Nuttall, *na-ol-il-tha'-he*, "bean-like leaf."

#### Order ROSACEÆ.

*Cercocarpus parvifolius* Nuttall, *tseh-es-thaz'-ee*, "heavy as a stone." The compact fine-grained wood, particularly that of the root, of this species of "mountain mahogany" has a high specific gravity.

*Cowania mexicana* Don, *a-way-tsal*, "baby's bed." The soft shredded bark of the "cliff-rose" is used to line the baby basket.

*Findlera rupicola*, *tsin-tlis'-i*, "hard wood." The wood is not hard when green, but is said to become so when seasoned, and is then used for arrows, weaving-forks and other articles requiring a hard wood.

*Amelanchier alnifolia* Nuttall, *dit-say-di-to'-dee*, "soft cherries." The cherry is called *ditsay*, a name for which I can discover no satisfactory derivation. The service berry is regarded by the Navajos as a variety of the cherry, or allied to the latter.

#### Order SAXIFRAGACEÆ.

*Tellima tenella* Watson, *tseh'-tha-sa-ka-dee*, "growing upright among rocks."

#### Order ONAGRACEÆ.

*Epilobium coloratum* Muhlenberg, *chil-a-tha'-eth-sos*, "feather-topped plant." Name refers to the plumes of the seeds showing through the open pod.

*Enothera breviflora* Torrey and Gray, *klay-ee-kaw'-hee*, "night blooming." The flowers unfold after sunset.

*Gaura parviflora* Douglas, *a-zay'-sa-kaz'-i*, "cold medicine." The infusion is supposed to allay inflammation and cure burns.

#### Order CACTACEÆ.

*Cereus phænicus* Engelmann, *ja-ee-na-i-o-kis'-ee*, "twisted

heart," so-called probably from the shape of this contorted cactus; but they say the fruit is poisonous and makes you feel as if your heart were twisted.

*Opuntia missouriensis* De Candolle, *hosh-int-yay'-lee*, "broad-thorny."

Order LOASASEÆ.

*Mentzelia multiflora* Il-klee'-hee, "tenacious." The leaves stick obstinately to the clothing.

Order UMBELLIFERÆ.

*Cymopterus purpureus* Watson, *ha-zah'-lit-so*, "yellow-flavor." It is used as a pot-herb in seasoning mush and soup.

Order COMPOSITÆ.

*Eupatorium purpureum* Linnæus, *kas-thaw'-bay-kaw*, "antidote for arrow poison."

*Eupatorium occidentale* Hooker, *bil-haz-chee*, "odorous in the wind."

*Gutierrezia euthamiae* Torrey and Gray, *chil-dil-gez'-ee*, "frightened weed." It is difficult to say why this name was given.

*Bigelovia graveolens* Gray, *kil-tso-i*, "yellow-stem." Used to dye wool yellow.

*Aster multiflorus* Linnæus, *nath-iz'-ee-ha-naz'-ee*, "eyelashes." Name suggested by the circle of fine rays.

*Thelesperma gracile* Gray, *wo'-tsin-i-a-zay*, "tooth medicine." Said to be good for the teeth, but in what way I did not learn. It is a nervous stimulant, and its decoction is used as a beverage by the Indians and Mexicans. The latter call it "*te de los Navajos*," or Navajo tea.

*Xanthium strumarium* Linnæus, *el-than'-ee-tsee-hee*, "sticking to one another." An appropriate name for the well-known cocklebur or clotbur.

*Sanvitalia aberti* Gray, *a-zay'-ho-tsee-hee*, "benumbing medicine." When chewed it has a salty pungent taste, which is followed by a sense of numbness in the mouth; said to be diaphoretic.

*Achillea millefolium* Linn., *ha-zay-il-tsay*, "squirrel's tail." Named from the shape of the leaves.

*Artemesia trifida* Willdenow, *tho-ee-kal'*, "water bearer." In the dry climates where it grows it is said to collect dew more readily than any other plant.



*Senecio douglassii* De Candolle, *hosh-bel-tay'-hee*, "cactus brush." The tops are used as brooms to brush the spines from cactus fruit.

#### Order LOBELIACEÆ.

*Lobelia splendens* Humboldt, Bonpland and Kunth, *tha-hee-thee'-hee il-tha'-hee*, "humming-bird's wing," which it is fancied to resemble.

#### Order OLEACEÆ.

*Forestiera neo-mexicana* Gray, *ma-i-tha'*, "coyote's corn." The bear is said to eat the fruit of this tree as well as the coyote.

#### Order ASCLEPIADACEÆ.

*Asclepias verticillata* Linnæus, *klish'-bi-tay-il-tsoz'*, "slender snake-horn." The pod has some resemblance to the horn of a rattlesnake (*Crotalus cerastes*). I imagine some *Asclepias* of stouter habit is called *klish-bitay*, or "snake-horn."

*Asclepidora decumbens* Gray, *chad-il-tay*, "antelope horn." Named from shape of pod.

The Asclepiads in general are often called *chil-a-pay*, or "milk weeds."

#### Order GENTIANACEÆ.

*Gentiana affinis* Gissel, *in-is'-ee-chil*, "witch plant." Supposed to be an antidote for witchcraft.

*Frazera speciosa* Douglas, *peen-il-cha'-hee* "deer's ear." The large obovate downy root-leaf has much resemblance to a deer's ear.

#### Order HYDROPHYLLACEÆ.

*Phacelia glandulosa* Nuttall, var. *neo-mexicana*, *a-zay'-in-chee-hee*, "angry medicine." It is said to inflame the skin.

*Phacelia integrifolia* Torrey, var. *palmeri* Gray, *a-zay'-in-chee'-hee-tso*. *Tso* means "big" (see *Phacelia glandulosa* ante).

#### Order BORRAGINACEÆ.

*Lithospermum angustifolium* Michaux, *a-zay'-ha-chee'-nee*, "red-body medicine." There is a myth, accounting for the redness of the root, saying it is derived from the blood of a magician or holy one who was killed by lightning.

*Lithospermum multiflorum* Torrey, *a-zay'-ha-chee'-ni-tso*, "great red body medicine" (see *L. angustifolium* ante).

## Order SOLANACEÆ.

*Solanum tuberosum* Linnæus, *nim'-as*, "anything globular; a ball." The potato grows wild in New Mexico.

*Lycium pallidum* Miers, *has-chay'-tha*, "the food of" a demi-god or genius named "*Has-chay*," a name derived from their mythology. The edible fruit is sacrificed to this god.

## Order OROBANCHACEÆ.

*Aphyllon multiflorum* Gray, *hleh'-do-lej*, "feet stuck in the ground." The plant at the root has somewhat the appearance of a moccasined foot sunk partly in the earth.

## Order LABIATÆ.

*Salvia lanceolata* Willdenow, *chal-tha'*, "frog's corn."

*Monarda fistulosa* Linnæus, *a-zay-in-do-tej'-ee*, "medicine tied at intervals." The name refers to the whorls.

## Order NYCTAGINÆ.

*Abronia cycloptera* Gray, *kin-tlish'-ee-tha*, "food or corn of" coleopterous insect named "*kintlish*."

## Order POLYGONACEÆ.

*Eriogonum elatum* Douglas, *hleh-a-zay*, "earth medicine." I have not discovered why this name is given.

*Eriogonum fasciculatum* Benthams, *bis-in-dis-chee'*, "red (clusters or tufts) scattered on a bank;" thus it grows.

*Eriogonum microthecum* Nuttall, *bisindishee'-baäd* "female *bis-indishee*." This species is regarded as the female of the former (*E. fasciculatum*) because more slender.

*Eriogonum racemosum* Nuttall, *nee-gan'-thee-hee*, "runs through the earth," *i. e.*, the long tap-root runs.

*Eriogonum jamesii* Benthams, *bil-na'-tho-i*, "with tobacco." The leaves are mixed with tobacco in smoking.

## Order AMARANTACEÆ.

*Amarantus blitoides* Watson, *nas-ka'-di*, "lying on the ground," referring to the prostrate or decumbent stems.

## Order CHENOPODIACEÆ.

*Eurotia lanata* Moquin, *kat-so-tha'*, "jack rabbit's corn."

## Order EUPHORBIACEÆ.

*Euphorbia pringlei* Engelmänn, *kay-tsee-hal-chee'*, "red near the feet." The stem is red at the base.

## Order SALICACEÆ.

*Populus fremonti* Watson, *thiss*. Etymology unknown. Cottonwood.

*Populus angustifolia* James, *thiss-tsoz*. Slender cottonwood.

## Order CUPULIFERÆ.

*Quercus undulata* Torrey, var. *gambelli* Engelmänn, *tseh-chel* or *chet-chel*, probably "rock plant." This oak is most common in rocky land, and is very hard.

*Quercus undulata* var. *pungens* Engelmänn, *tseh-chel-inklizi* "hard rock plant," or "hard oak."

*Quercus undulata* var. *brevifolia* Engelmänn, *tseh-chel-inglizi'*, *baka*. *Baka* means "male." This variety is spoken of as the male of the last because more robust and spiny.

## Order LORANTHACEÆ.

*Phoradendron juniperum* Engelmänn, *dah-tsa'*, "a basket on high." This parasite has some resemblance to a basket placed in the branches of a tree.

## Order CONIFERÆ.

*Juniperus virginiana* Linnæus, *kat-nee-ay-li*, "strained juniper." Its long pendulous branchlets (very long and slender in this region) look like material pouring from a strainer. *Kat* is the *Juniperus communis* Linnæus.

*Juniperus pachyphlæa* Torrey, *kat-dil-tah'-li*, "cracked juniper." Its bark presents a cracked or broken surface like that of white-oak, and very unlike that of other junipers.

## Order LILIACEÆ.

*Allium palmeri* Watson, *tlo-chee'-nee*, "strong-smelling grass." This name is generic for all onions and garlics. Cultivated onions are called *tlo-chee'-nee-tso*, or "big onions."

*Allium cernuum* Rothrock, *tlo-cheen'-lit-chee'*, "red onion."

*Yucca baccata* Torrey has two names, viz., *hosh-kawn*, "sweet-thorny," which alludes to its pleasant fruit and sharp-pointed leaves; and *tsa'-si*, which seems to be a generic name, and whose derivation I know not.

*Yucca whipplei* (?) Torrey, *yay'-bi-tsa-si*, "Yucca of the gods," a name derived from their mythology.

*Yucca angustifolia* Pursh, *tsa'-si-tsoz*, "slender Yucca."

*Calochortus nuttalli* Torrey, *al-tseel'-nee-tha'-i*, "children's food or corn." Children eat the bulb.

Order GRAMINEÆ.

*Sporobolus cuspidatus*, *bay'-ee-jo*, "an instrument to comb or brush the hair." The Indians of the Southwest make brushes from this grass.

*Sporobolus crytandrus* Gray, *tloh-tsoz'-ee*, "slender hay."

*Oryzopsis cuspidata* Benthams, *in-dit-lilh'-ee*, "burnt off or burnt free." The name refers to the persistent chaff which can only be removed by roasting when the edible seeds are cleaned.

*Bouteloua hirsuta* Lagasca, *tloh-nas-tas'-ee*, "bending hay." the racemes are curved almost to a semicircle.

*Poa andina* Nuttall, *tsin-ya-tloh'*, "hay under the trees." In the Navajo country the habitat of this grass is usually sub-arboreal.

*Phragmites communis* Linnæus, *tloh-kah'*, "arrow-hay." The culms were formerly used for arrow-shafts.

*Hordeum jubatum* Linnæus, *ha-zay'-il-go-ee*, "runs down the throat." A spikelet once in the mouth is with difficulty ejected, it tends to go further down. It is usually necessary to pull it out with the fingers.

In addition to the above there are many names for which no satisfactory etymology can be found.

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## CROW ROOSTS AND ROOSTING CROWS.

BY SAMUEL N. RHODS.

(Continued from p. 701, August Number.)

THE nearest roost to Bristol, now existing in the State of Pennsylvania, of which I am able to get account, is situate in Montgomery county, on the farm of Alfred Moore, and near the post-hamlet of Davis' Grove. This gentleman informs me that they (the crows) first came to his place in the winter of 1878, from Camp Hill, in the same county, which locality he remembers to have been their rendezvous for twenty-five years. The present roost covers about twenty acres. Careful average estimates of the number of birds commonly roosting per acre show the maximum to be about ten thousand. Therefore, although